



537066

(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/054103 A1(51) International Patent Classification⁷: H03H 17/06(21) International Application Number:
PCT/IB2003/005647

(22) International Filing Date: 4 December 2003 (04.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 6 June 05
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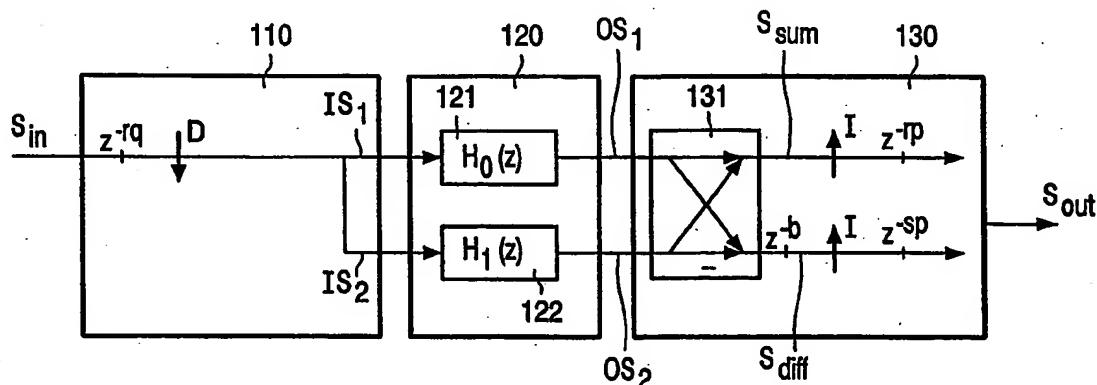
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(NL).(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.(84) Designated States (regional): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN,
IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,
ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD,
SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,

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(54) Title: MULTIRATE FILTER AS WELL AS DISPLAY SYSTEM AND MOBILE TELEPHONE COMPRISING SAID MUL-
TIRATE FILTER

(57) Abstract: A multirate filter according to the invention comprises, a) an input unit (10) for receiving an input signal (S_{in}) and for providing a plurality of intermediate signals (IS_1 , IS_2) in response to said input signal, b) a filter unit (20) coupled to the input unit (10), and c) an output unit (30) coupled to the filter unit (20), for generating an output signal (S_{out}). The filter unit (20) comprises at least a first and a second filter module (21, 22), with a transfer function $H_0(z)$ and a transfer function $H_1(z)$ respectively, which are mutually related according to the relations $H_0(z) = c_0(H_B(z) + M_{\alpha,\psi}H_B(z))$ and $H_1(z) = c_1(H_B(z) + M_{\alpha,\psi}H_B(z))$ wherein, $M_{\alpha,\psi}(H_B(z)) = \alpha z^{-2\psi} H_B^*(z^{-1})$, and wherein Formula (I), being the z-transform of $h_b[m]$. The multirate filter comprises a combination unit (11) coupled to said filter modules (21, 22) for generating a first combination signal (S_{sum}) and a second combination signal (S_{diff}).

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